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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/373,837	08/13/1999	METIN AYDEMIR	RA999-005	2996

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EXAMINER	
VOLPER, THOMAS E	
ART UNIT	PAPER NUMBER
2697	

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/373,837	Applicant(s) AYDEMIR ET AL.	
	Examiner Thomas Volper	Art Unit 2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-18 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-18 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 16 May, 2003 have been fully considered but they are not persuasive. The Examiner disagrees with Applicant that the claims 1, 13 and 25 are now in allowable form. Although the limitation added to claims 1, 13 and 25, i.e. computing a delay interval, was previously indicated as allowable, the Examiner takes a new position that the amended claims 1, 13 and 25 are unpatentable based on the prior art. Specifically, Diaz et al. (US Pat. 5,809,021) discloses a backoff period to deal with congestion. In order to have a backoff period, some time interval must have been computed because the period could not progress indefinitely. Furthermore, this time period is based on the input buffer occupancy since Diaz et al. discloses that when a predetermined threshold is reached in the input buffer, the backoff period is terminated. The rejection of claims 1-25 in this office action has been made non-final due to the reversal of the Examiner's position.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, 8-18 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou et al. (US 5,790,522) in view of Diaz et al. (US 5,809,021).

Regarding claims 1, 9-13 and 21-24, Fichou discloses a method for congestion control within a switch having at least one input section that includes an input buffer (receive adapters with buffers 42, shown in Figure 4). The data is transmitted from the input section to an output section through a switching fabric (col. 6, lines 13-31 and Figure 4) and data transmission is paused when congestion is detected within the switching fabric or output section (col. 8, lines 2-6). Fichou does not expressly disclose computing a delay interval in accordance with input buffer occupancy. Diaz discloses a switch that uses a backoff period to deal with congestion. However, when the input queue buffer occupancy reaches a congestion threshold, the backoff status is ignored and the backoff time period is terminated (col. 23 , lines 14-24). The threshold defines a high level and low level of occupancy, as claimed in the present invention, wherein values below the threshold represent low level occupancy values and values above the threshold represent high level occupancy values. In other words, the backoff period is dependent on the input buffer occupancy. In order to have a backoff period, some finite period of time must be computed for the delay, and as the buffer occupancy approaches a certain value, the delay goes to zero. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the input buffer occupancy to determine the period for a delay in the congestion controlled switch of Fichou. One of ordinary skill in the art would have been motivated to do this to prevent losses at the ingress side.

Regarding claims 2 and 14, Fichou further teaches that the data switch contains an output buffer (queue) and a backpressure signal generator within the switch fabric used when switch congestion is detected (col. 5, lines 15-20 and 30-32).

Regarding claims 3 and 15, Fichou further teaches that a backpressure signal indicates the existence of congestion conditions (col. 8, lines 26-27).

Regarding claims 4 and 16, Fichou further discloses that data transmission is paused when a backpressure signal is received, meaning congestion is detected (col. 8, lines 2-6).

Regarding claims 5 and 17, Fichou further teaches that in practice, congestion is detected when the output queue is full, meaning a high level of occupancy (col. 5, lines 15-18).

Regarding claims 6 and 18, Fichou further discloses that in practice, the output buffer is monitored and when congestion is detected, a congestion indication signal is generated (backpressure) and delivered to input section, which pauses data transmission (col. 5, lines 15-18).

Regarding claims 8 and 20, Fichou does not disclose computing a delay in accordance with input buffer occupancy, nor that this delay varies inversely with the buffer occupancy. As previously mentioned, Diaz provides for a backoff period, which is computed to extend for some finite period of time. However, as the buffer occupancy approaches a certain value, this period of time goes to zero. This represents an inverse relationship between the input buffer occupancy and backoff time period. At the time the invention was made, it would have been obvious to use this inverse relationship to compute a delay period for the congestion controlled switch of Fichou. One of ordinary skill in the art would have been motivated to do this in order to prevent cell loss at the input buffer as the input buffer approached its full capacity.

4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou et al. (US 5,790,522) in view of Diaz et al. (US 5,809,021) and Basso et al. (US 5,787,071).

Regarding claim 25, Fichou discloses a congestion controlled switch with an input section and input buffer that transmits data to an output section through a switching fabric, wherein data transmission is paused when congestion is detected within the switching fabric or output section (Figure 4 and col. 8, lines 2-6). Fichou fails to disclose that the delay interval is computed in accordance with input buffer occupancy without regard to data priority. Diaz discloses computing a delay interval in accordance with input buffer occupancy (col. 23 , lines 14-24) and Basso discloses a backpressure system to throttle traffic entering a node when traffic exceeds a high threshold, wherein the congestion mechanism is able to globally stop all link traffic, i.e. without regard to priority (see Abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the input buffer occupancy to determine the period for a delay in the congestion controlled switch of Fichou, wherein priority would not be taken into account. One of ordinary skill in the art would have been motivated to do this to prevent losses at the ingress side, including cell losses of a lower priority.

Conclusion

5. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating

to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

tev

July 14, 2003

HUY D. VU
SUPERVISORY PATENT EXAMINER
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